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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,984	12/09/2003	Jau-Jen Du	0941-0880P	2759

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BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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NGUYEN, TUYEN T

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/729,984

**Applicant(s)**

DU ET AL.

**Examiner**

TUYEN T. NGUYEN

**Art Unit**

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5, 8, 16 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9-15, 17, 18 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/09/2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of embodiment 1, figures 2A-2e, claims 1-4, 6-7, 9-15, 17-18 and 20 in the reply filed on 05/09/2005 is acknowledged. The traversal is on the ground(s) that embodiment 1, 2, 3 and 4 are related and not distinct. This is not found persuasive because the coil structure of embodiments 2-4 differ from embodiment 1 and need further search in other areas.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 6-7 and 9-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, applicant should clarify the structure of the projection of the cores. Applicant should clarify the structure/arrangement of the primary windings. Is there more than one primary winding (coil)? Applicant should clarify what is intended by "at least one printed circuit board serving as primary windings. Applicant should clarify what is intended by "an insulation wire wound around said projections of said cores to serve as secondary windings." Is there more than one secondary winding (coil)? Applicant should clarify. There is no antecedent basis for "said projections of said cores." Claims 2-4, 6-7 and 9-13 inherit the defects of the parent claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 9-11,13-14 and 20, as best understood in view of the rejections under 35 USC 112 second paragraph, are rejected under 35 U.S.C. 102(b) as being anticipated by Nakano et al. [JP 61-142721].

Nakano et al. discloses a transformer [figure 1] comprising :

- a magnetic core structure including an EI core [1, 1'];
- first and second printed circuit boards having a plurality of spiral traces [3, 3'] formed thereon and serving as primary coil, wherein each the printed circuit board having a hole for allowing a central projection of the E core penetrate therethrough;
- at least one insulation wire [2] wound about the central projection of the E core and serving as secondary coil and disposed between the first and second printed circuit boards, wherein the insulation wire having end leads [figure 1]; and
- a plurality of insulation layers [4] alternately disposed between the core elements and the coils [see figure 1].

Regarding claim 10, ferrite is a known magnetic core material.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7, 15, and 18, as best understood in view of the rejections under 335 USC 112 second paragraph, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. [JP 61-142721] in view of Hirohashi et al. [JP 05-135968].

Regarding claims 4 and 15, Nakano et al. discloses the instant claimed invention except for a plurality of rods.

Hirohashi et al. discloses a transformer [figures 1-3] comprising :

- a core structure including two E-typed core elements [30];
  - a winding structure [10] including a plurality of printed circuit boards having conductive traces formed thereon, the printed circuit board having a center hole for receiving a center projection [30a] of the E-type core element, and a plurality of conductive holes [figure 3];
- and
- a plurality of fixing rods [24, 26].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the fixing rod design of Hirohashi et al. in Nakano et al. for the purpose of fixing and aligning the printed circuit board.

Regarding claims 7 and 18, the specific insulation design of the insulation wire would have been an obvious design consideration for the purpose of improving insulation.

Claims 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. in view of Hirohashi et al. as applied to claim 1 above, and further in view of Kuroki [JP 06-325952].

Nakano et al. in view of Hirohashi et al. discloses the instant claimed invention except for the end leads having soldered portions.

Kuroki discloses a transformer [figures 1-2] comprising:

- a core structure including two E-typed core elements [3, 4];
- at least two printed circuit boards [8, 9] having conductive traces formed thereon forming a primary winding, wherein the printed circuit board including a center hole for receiving a central portion of the E-typed core elements and a plurality of conductive holes for receiving fixing rods [5, 6]; and
- at least one secondary coil [11] being sandwiched between the printed circuit boards, wherein the secondary coil including end leads [11a, 11b] having soldered portions.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include soldered portions in the end leads of Nakano et al., as modified, as suggested by Kuroki, for the purpose of facilitating connections/manufacturing.

Claims 6 and 17, as best in view of the rejections under 35 USC 112 second paragraph, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakano et al. in view of Hirohashi et al. as applied to claims 1 and 14 above, and further in view of Billings [US 4,692,604].

Nakano et al. in view of Hirohashi et al. discloses the instant claimed invention except for the insulation wire wound about a bobbin.

Billings discloses a transformer structure [figures 1-2] comprising:

- a printed circuit board [10] having a printed coil [12] formed thereon;
- a core structure [20, 14]; and

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- a coil [24] wound about a bobbin structure disposed on projection [22] of the core structure.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include bobbin for the insulation wire of Nakano et al., as modified, as suggested by Billings, for the purpose of improving insulation.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TUYEN T. NGUYEN whose telephone number is 571-272-1996. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ELVIN ENAD can be reached on 571-272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTN *TTN*

*Tuyen T. Nguyen*